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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,333	08/13/2001	Don Hee Lee	0465-0844P	8588
2292	7590	03/10/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			SINES, BRIAN J	
			ART UNIT	PAPER NUMBER
			1743	

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/913,333

Applicant(s)

LEE ET AL.

Examiner

Brian J. Sines

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "semiconductor" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Regarding claims 2 and 6, in line 6 of claim 2, the phraseology "over/below" is unclear. It is unclear if the claim includes the claimed apparatus having an electrode positioned both over and below the sensing film, or excludes one or the other electrode configuration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

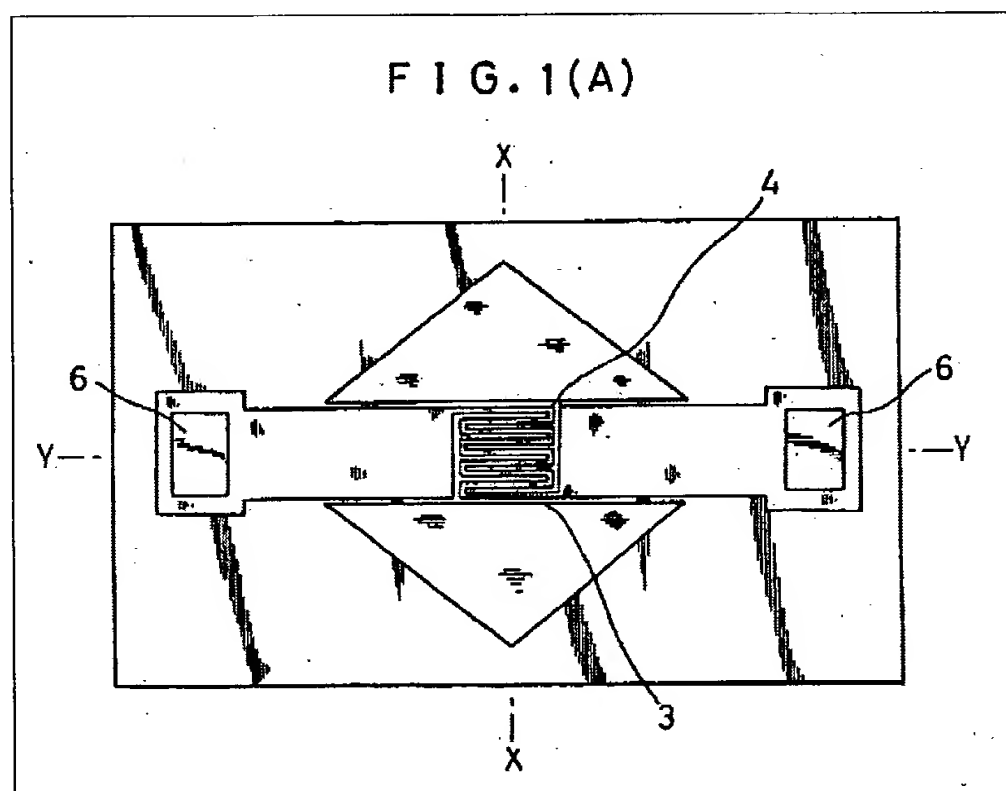
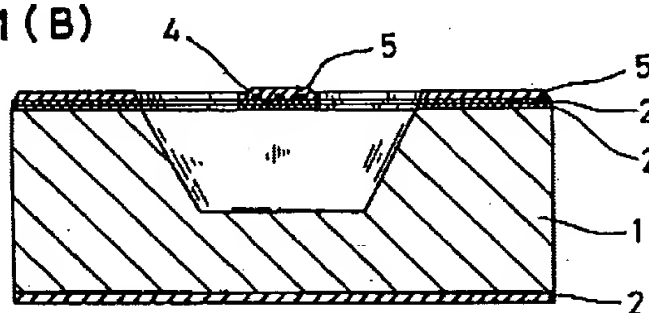
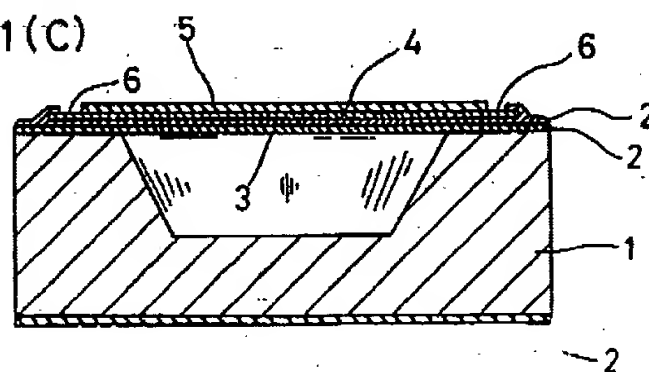
A person shall be entitled to a patent unless –

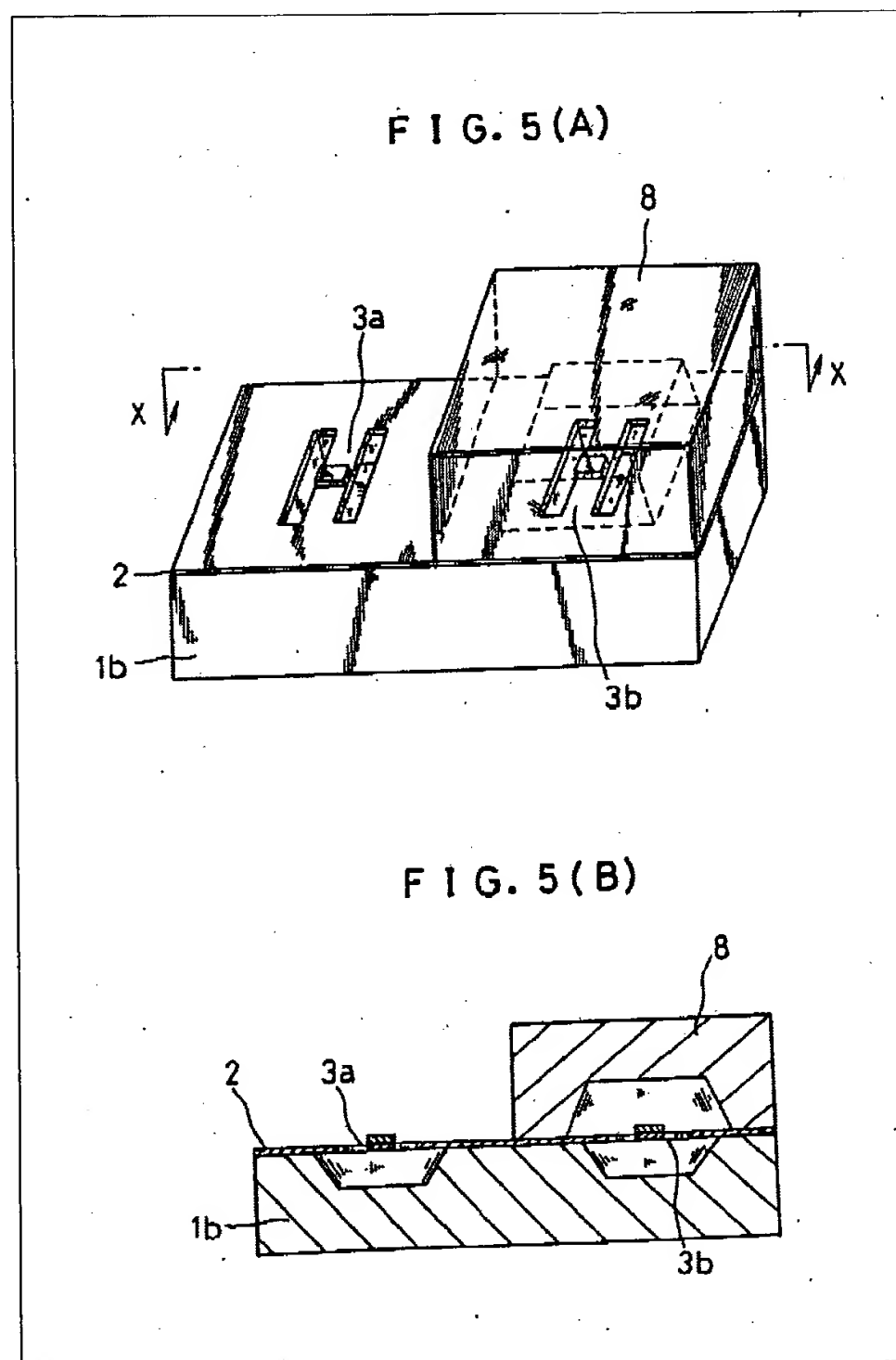
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugihara *et al.* (U.S. Pat. No. 5,048,336). Regarding claim 1, Sugihara *et al.* teach a sensing apparatus comprising: a silicon substrate (1); a humidity sensing element (4); a temperature compensating element (*e.g.*, 3b); and a passivation or protective film (5) covering the temperature

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compensating element (see col. 6, line 31 – col. 10, line 25; figures 1A – 9). Regarding claim 7, the passivation film (5) may comprise Si_3N_4 (see col. 7, line 42 – col. 8, line 6)

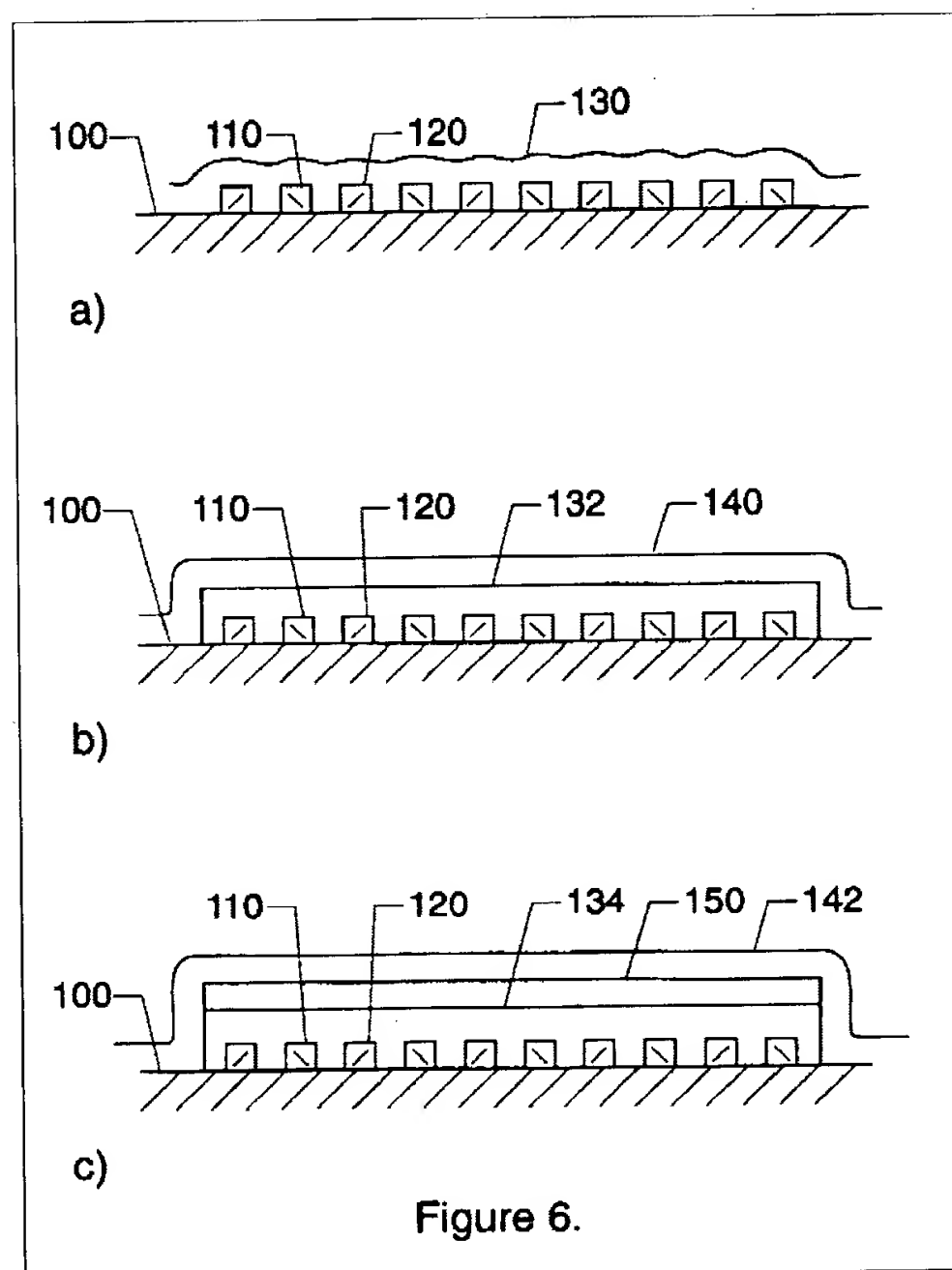
**FIG. 1(B)****FIG. 1(C)**



2. Claims 1 – 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Geist (U.S. Pat. No. 5,767,687 A). Regarding claim 1, Geist teaches a sensing apparatus comprising: an electrically-insulating silicon substrate (100); a humidity sensing element (132); a temperature compensating element, which is co-integrated with the sensor on the sensor substrate; and a passivation or protective film (140) covering the temperature compensating element (see col. 11, lines 52 – 65; figure 6). Regarding claim 2, Geist teaches the incorporation of an insulating film

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(142) positioned on the substrate (100) (see col. 6, lines 39 – 57; figure 6a). The humidity sensing film (134) is positioned with the insulating film (142). Electrodes (110 & 120) are positioned below the humidity sensing film (134) (see figure 6a). Regarding claims 3 and 7, Geist teaches that other insulating or passivation film layers may be utilized, such as nitrides, mixed oxy-nitrides and glasses, which are well known in the art (see col. 10, lines 52 – 67). Regarding claim 4, Geist teaches that the sensing film (132) is a polyimide material (see col. 12, lines 40 – 60; figure 6b). Regarding claims 5 and 6, the electrode configuration has a comb shape (see col. 6, lines 4 – 19; figures 3a & 4b).



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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

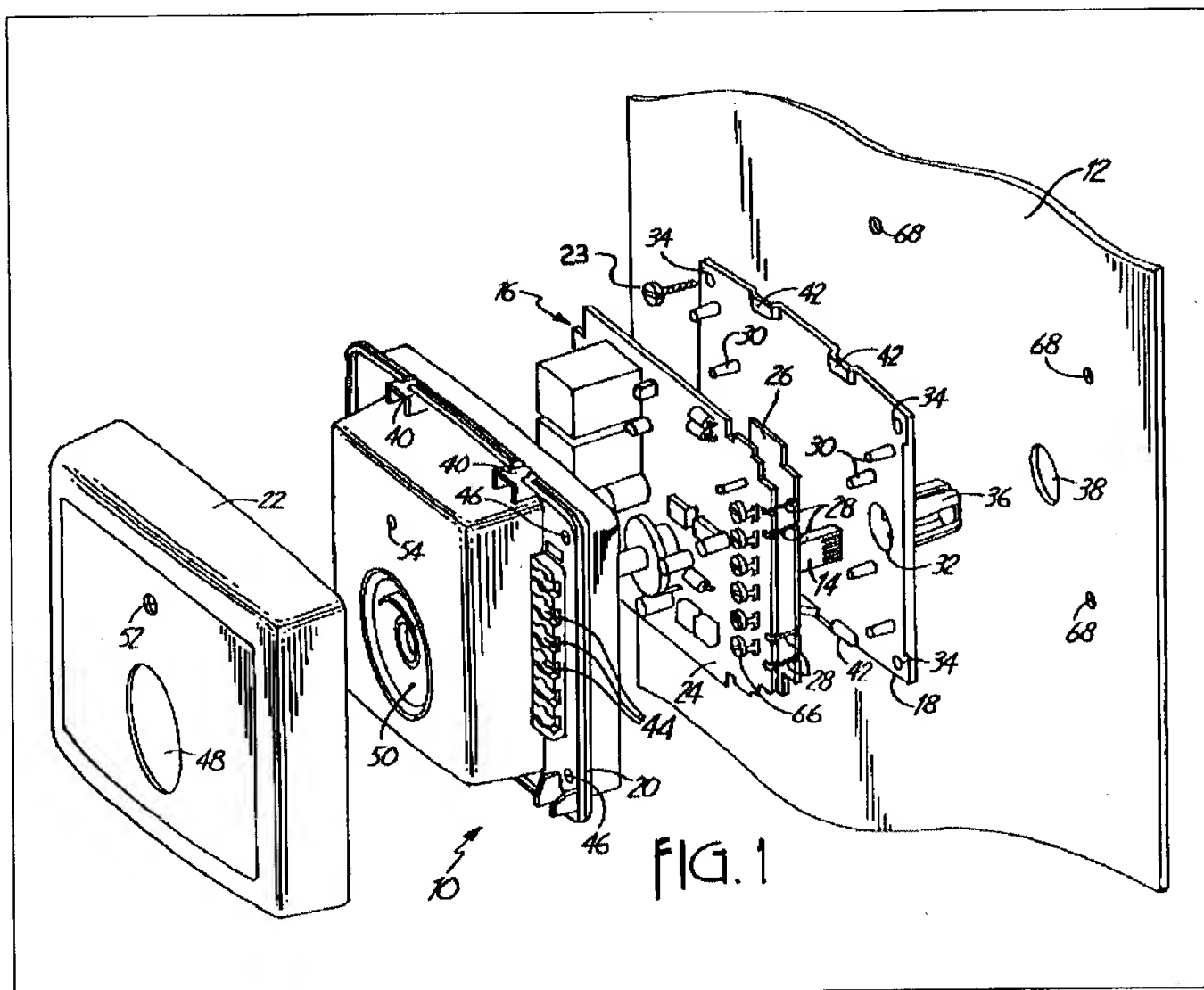
U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

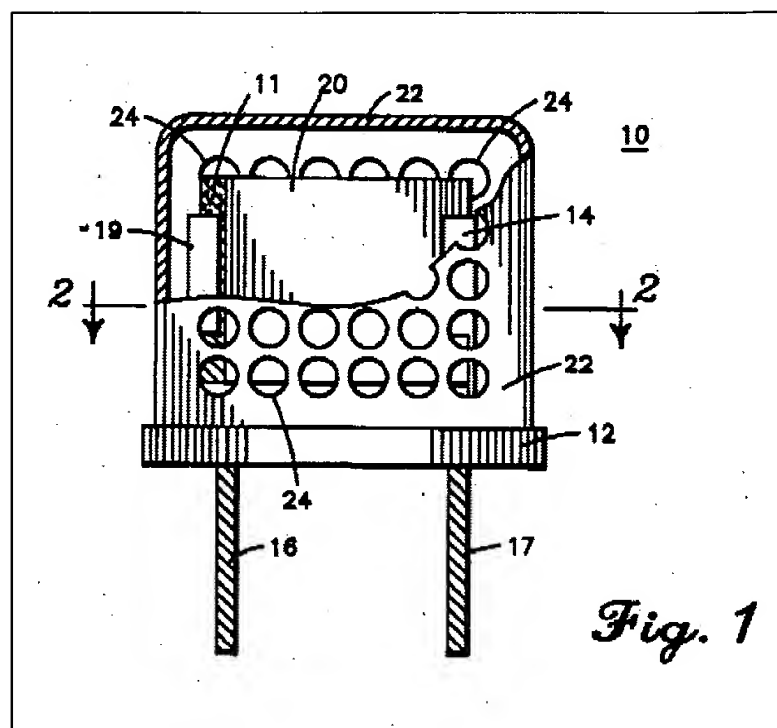
Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geist in view of Erickson *et al.* (U.S. Pat. No. 6,254,008 B1) and Howng (U.S. Pat. No. 4,677,415). Geist does not specifically teach the incorporation of a printed circuit board or a metal shield casing. Erickson *et al.* do teach a humidistat or humidity sensing apparatus comprising sensing element (14) mounted on a printed circuit board (16), wherein the apparatus further comprises electrical wire connections (28) (see col. 2, lines 55 – 67; figure 1). The apparatus further comprises a shield or casing (front cover 22) having a large aperture (48) (see col. 3, lines 46 – 66). Erickson *et al.* teach that their humidistat design offers advantages over prior conventional designs for monitoring and controlling the humidity of residential and commercial buildings by placing the humidistat on the return airflow of a furnace duct (see col. 1, lines 15 – 67 & col. 2, lines 1 – 11). It would have been obvious to a person of ordinary skill in the art to incorporate

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the humdistat design, as taught by Erickson *et al.*, with the sensing apparatus of Geist in order to facilitate more effective humidity monitoring and control for residential and commercial buildings.



However, Erickson *et al.* do not specifically teach that the front cover (22) is comprised of metal. Howng does teach a humidity sensing apparatus comprising a metal housing (22) having a plurality of apertures (24) (see col. 3, lines 46 – 65; figure 1).



The Courts have held that the selection of a known material based upon its suitability for the intended use is within the ambit of one of ordinary skill in the art. See *In re Leshin*, 125 USPQ 416 (CCPA 1960). Therefore, it would have been obvious to a person of ordinary skill in the art to utilize a shield or casing comprised of metal, as taught by Howng, with the humidity sensing apparatus, as taught by Geist in view of Erickson *et al.*, in order to provide for a more sturdy sensing apparatus.


Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kotani *et al.* teach a humidity sensor incorporating an electronic circuit mounted on a printed circuit board fixed within a housing. Schultz *et al.* teach an enclosure for a humidity sensing apparatus. Reich *et al.* teach a relative humidity sensing apparatus including a printed circuit board having a central passageway.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines, Ph.D. whose telephone number is (571) 272-1263. The examiner can normally be reached on Monday - Friday (11:30 AM - 8 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jill Warden
Supervisory Patent Examiner
Technology Center 1700